

County Palatine of Chester.

R E P O R T

OF THE

MEDICAL OFFICER OF HEALTH

ON THE EXISTING

ISOLATION HOSPITALS

IN THE ADMINISTRATIVE COUNTY,

AND

WHAT FURTHER PROVISION SHOULD BE
MADE FOR ESTABLISHING ADDITIONAL
ISOLATION HOSPITALS.

PRESENTED TO THE

PUBLIC HEALTH COMMITTEE


OF THE COUNTY COUNCIL,

January 25th, 1895.

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REPORT OF THE MEDICAL OFFICER OF
HEALTH for the County of Chester, on the
existing Isolation Hospitals in the Administrative
County, and what further provision should be
made for establishing additional Isolation
Hospitals.

At a Meeting of the Public Health Committee, held at
Crewe, on October 19th, 1894, after the Annual Report of the
County Medical Officer of Health for the year ending December
31st, 1893, had been considered, it was Resolved :

“That the County Medical Officer of Health be instructed
to report to this Committee as to the existing
Isolation Hospitals in the Administrative County,
and what further provision should, in his opinion, be
made for establishing additional Isolation Hospitals,”

The County Medical Officer of Health accordingly drafted
a “Return of existing Hospitals for Infectious Diseases,” and
sent printed copies of this to the Medical Officers of Health or
Surveyors of the Districts in which it was known some provision
had been made for the isolation and treatment of the infectious
sick. This form of “Return” was sent out in November, and
asked for information under the following heads :—

1. History of Hospital.
2. Site (extent) and Soil.
3. Description of Hospital Buildings.
4. Method of Ventilating and Warming Hospital.
5. Furniture of Hospital.
6. Closets, Sinks and Bath accommodation.
7. Water Supply and Drainage.
8. Number of Diseases for which provision is made.
9. Number of Beds provided.
10. Air-space per Bed and Floor-space per Bed.
11. Is Hospital used for Paupers, and if so, under what
conditions?
12. Is Hospital used by neighbouring Sanitary Districts,
and if so, under what conditions?
13. Number of Patients treated during each of the
3 years—1892, 1893, and 1894.
14. Payments of Patients.
15. General and Medical Administration.
16. Disinfecting Apparatus provided.
17. Ambulance provided.
18. Influence of Hospital on surrounding neighbourhood.
19. Cost of Construction and Maintenance.
20. Remarks.
21. Extent of further accommodation required, if any?

After the receipt of each "Return," or (where there was some delay in remitting it) prior to its receipt, the County Medical Officer of Health visited the District, and made a personal inspection of the Hospital provision. However as the temporary Hospital at Crewe had been lately inspected, it was not again visited, but the County Medical Officer was afforded an opportunity of going over the recently acquired site for the proposed new hospital.

From the "Returns" sent in, and from personal inspection, the following particulars were obtained regarding :—

The Isolation Hospital provision made by Urban and Rural Districts in the Administrative County.

ALTRINCHAM.

Urban Sanitary District.

Population at Census, 1891—12,440.

Estimated population in middle of 1894—12,880.

Area in acres—662.

Lloyd's Fever Hospital was built in 1851, and vested in trustees for use of Altrincham and Bowdon. In 1877 it was leased to Altrincham Local Board, under deed approved by Charity Commissioners, for the same area. The hospital was added to by the Local Board at the time of lease, by the erection of a building in rear, of wood and iron. The necessity for this arose through an epidemic of small-pox.

The hospital site consists of about an acre of land, triangular in shape and having streets on two sides of it, and bounded at the back by a railway cutting, on the other side of which is open country. The soil is sandy.

The main building is of brick. It contains 4 wards, 2 bedrooms, a matron's room, kitchen, scullery, store house, 2 bath rooms and w.c.'s.

The additional building is of corrugated iron lined with felting, and panelled inside with wood. It contains 2 wards, nurse's room, small kitchen, 2 baths and 2 earth closets.

Both buildings are warmed by open fireplaces, and fresh air is admitted by means of Tobin's tubes. The iron bedsteads and other furniture are good and sufficient.

Excellent water is supplied by the North Cheshire Water Company. The premises are drained into the public sewers.

The diseases treated in the main building are scarlatina, diphtheria and typhoid fever. The additional building was erected for small-pox cases, and has been used for these. It was thought also that it might be available for cholera, should this disease occur.

In the main building are 16 beds for patients, viz. :—4 beds in each of the 4 wards. Here the floor-space per bed is 60 square feet, and the air-space per bed 660 cubic feet. In the additional building is accommodation for 16 beds for patients, viz. :—8 beds in each of the 2 wards. Here the floor-space per bed is 92 square feet, and the air-space per bed is 1150 cubic feet.

Patients are not admitted from the workhouse, but paupers are not excluded. The only Sanitary District beside Altrincham using the hospital is Bowdon, which has a right to use it under the original trust, and pays an annual contribution towards expenses.

The number of patients treated in 1892 was 89; the number in 1893 was 93, and the number in 1894 was 54.

The charge made in respect of pauper patients is 10/6 a week. Other patients, if able, pay from 15/- to 21/- a week. No charge is made to poor persons.

The Medical Officer of Health has general supervision of the hospital. Patients are treated by their own medical attendants. The staff for the main building (the additional building is not at present in use) consists of a nurse-matron, a nurse, servant and man. Extra trained nurses are hired when necessary.

A "Washington-Lyon's" disinfecting apparatus is provided, and a covered van for bringing bedding, &c., to the apparatus. The ambulance used for patients is a brougham.

The hospital has certainly not had a bad influence on the surrounding neighbourhood, since the small-pox epidemic of 1877. At that time the principal incidence of the disease was some distance away in a rather crowded area. The sickness was not at all marked near the hospital. The servants and nurses were re-vaccinated, and no cases occurred among them.

The cost of the old hospital is not known. The cost of the additional building was £500, and the cost of furnishing it was £250, including cost of fireplaces, cooking stove, baths, &c.

When the hospital was inspected, it was clean and in good order. Two of the 4 wards in the main building were full of scarlatina patients, most of them being convalescent.

The district Medical Officer of Health reports that the hospital has worked well and been a great help in controlling outbreaks of infectious disease. It is freely used and in good repute with the people. Hitherto it has proved equal to the demands made upon it.

ALTRINCHAM.

Rural Sanitary District.

Population at Census, 1891—29,245.

Estimated population in middle of 1894—31,000.

Area in acres—62,307.

The only accommodation for the isolation of cases of infectious disease provided by this large Rural District is a marquee. This does not appear to have been made use of up to the present, and under any circumstances would only be adapted for treating patients during favourable weather. It seems to have been originally obtained with a view to its being available for cases of cholera, should they occur. The marquee, when erected, would have space for 4 patients.

The District Medical Officer of Health, in his last Annual Report, represents to his Authority that an infectious hospital should be provided for Knutsford, and for the combined townships of Timperley, Hale, Dunham Massey and Ashton-on-Mersey.

CONGLETON.

Municipal Borough.

Population at Census, 1891—10,744.

Estimated population in middle of 1894—10,744.

Area in Acres—2,572.

During the Spring of 1889 there was an outbreak of small-pox in this town, and four cottages were rented for the purpose of isolating the cases. With two or three exceptions all the cases occurring were thus effectually isolated and the cottages were closed again in about four months. They have not been used since, but have been retained by the Corporation as an isolation hospital for small-pox only.

These four cottages are ordinary labourers' dwellings containing four rooms each. They are built of brick and situated at the end of a row of similar cottages. Beyond and at front and back are open fields, and the cottage next the occupied row was never used for patients. The situation of the site is fairly good, the elevation satisfactory, and the subsoil sand. The sanitary accommodation consists of ash-pit privies, and the only drainage provided is into an open ditch just in rear of the yards. At the time of inspection this ditch contained a considerable quantity of very offensive sewage, but it was stated that steps were about to be taken for draining the property. A supply of town's water is provided.

The rent paid for the 4 cottages is £25 a year, and the furnishing (iron bedsteads, bedding and simple requisites) cost £36 17s. 0d.

The number of beds provided for patients is 8, each bed being placed in a separate room. The mean floor-space per bed is 138 sq. ft., and the mean air-space 966 cubic ft.

No charge was made to patients for maintenance, &c., but a proportion of the expense of pauper patients treated was paid by the Guardians.

The general administration of the hospital was undertaken by the Sanitary Authority, but each patient was attended by the medical practitioner sending him in.

At the time of the small-pox outbreak an old cab was used as an ambulance; and this was afterwards destroyed. No disinfecting apparatus is provided. The clothing, &c. infected with small-pox was burned.

In no case did small-pox spread from the hospital-cottages to others. There were at no time more than six cases under treatment.

CONGLETON.

Rural Sanitary District.

AND

SANDBACH.

Urban Sanitary District.

Population at Census, 1891—20,241.

Estimated population in middle of 1894—21,038.

Area in acres—45,090.

The hospital jointly provided by this Rural District and Urban District is a wooden building erected in the early part of 1893. It consists of a stout wooden frame-work, boarded over within and without. The site is a quarter of an acre of land (sandy loam) near the Congleton Union Workhouse, at Arclid. The main building provides a large ward, a nurse's room, kitchen and scullery. Attached is a mortuary and coal-store. The ward is divided into 2 compartments by means of a high movable screen, for the separation of the sexes. The warming is effected by means of coal stoves, and fresh air is admitted through Tobin's tubes. The furniture is suitable and sufficient and includes a movable bath. The two closets are fitted with pails.

The number of beds provided is 8. The amount of floor-space per bed is 836 square feet, and the amount of air-space per bed is 1100 cubic feet. Paupers may be admitted, the Guardians paying for them at a fixed rate. Of the six patients treated up to the present, 2 paid for their own maintenance, 3 were paid for by the Guardians, and one (a nurse who had been attending patients) was admitted free.

The water supply is from a pump-well, and appears satisfactory. No steam disinfecting apparatus is provided, but the Sanitas Co.'s fumigator is used. The workhouse van is available as ambulance.

The hospital was not in use when inspected, but it was clean and in order. It is in charge of the master of the Congleton Union Workhouse, and a medical practitioner in Sandbach acts as medical officer.

The entire cost of providing this hospital was £550, including furniture.

CREWE.

Municipal Borough.

Population at Census, 1891—32,783.

Estimated population in middle of 1894—35,961.

Area in acres—2,193.

In 1883, the Corporation, with a view to making provision for isolating small-pox cases, rented a brick building which had been previously occupied as a farm house. It contains 9 rooms, 6 of which are available for hospital purposes; the remainder being used by the caretaker. It has a southern aspect, stands on a plot of land (clay) an acre and a half in extent, and is set back about 30ft. from a little-used lane outside the town. The warming and ventilation is as in an ordinary house, except that in one room there is a shaft ventilator carried up through the roof. The furniture is light, but practically sufficient. There is a full-sized movable bath. Town's water is supplied. There is no closet in the house, but a privy (pail) outside. The drains deliver on the adjacent sewage farm.

There are 7 beds provided for patients. The mean floor-space per bed is 100 sq. ft. and the mean air-space 950 cubic ft. The patients are not charged anything for maintenance, &c. The hospital is used solely for small-pox cases occurring within the Borough. Only two patients have been treated in the hospital during the 3 years, 1892-94. These patients were received into hospital in January, 1893, and discharged in about six weeks. The cost of these cases to the Corporation (including £10 1s. 6d. given in compensation for clothing, bedding, &c., destroyed) was £101 12s. 8d. The rental paid for the hospital is £20 per annum.

A four-wheel horse ambulance is kept at the hospital, and a Washington Lyon's steam disinfector is provided.

The hospital is administered by the Medical Officer of Health. The caretaker lives on the premises rent free, but receives no wages. £10 per annum covers the cost of coal, white-washing, &c.

The nearest house is 100 yards distant, and there are but 5 houses within a radius of a quarter of a mile. The influence of the hospital on the surrounding neighbourhood is negative.

The Borough Medical Officer of Health is of opinion that permanent accommodation should be provided, to the extent of at least 20 beds for scarlatina. Land on which to erect a hospital has been purchased, and architects have been invited to submit designs.

HYDE.

Municipal Borough.

Population at Census, 1891—30,670.

Estimated population in middle of 1894—31,369.

Area in acres—3,074.

Land was purchased by the Corporation in 1882, for an Infectious Diseases Hospital, but nothing further was done till the outbreak of small-pox in 1886, when a wooden pavilion, consisting of two wards, and an administrative block were erected rather hastily. Subsequently a brick building, designed for cases of two or three distinct diseases, was erected. These buildings occupy a suitable site, elevated as regards the town, and convenient of access. They stand about the centre of a 4 acre plot, 100 yards or more from the main road from Stockport to Mottram, in the district of Gee Cross. The site is well drained with good fall, and the soil is the ordinary local light clay.

The old wooden building is still kept for the use of small-pox, and is considered to be equal to the accommodation of 30 cases, but when inspected it contained but 20 beds, and there were no patients. It was stated that this erection will probably eventually be superseded by a permanent brick building. The new building of brick, consists of 4 wards, each opening direct on a veranda, and providing together 16 beds for patients. The mean floor-space for the 36 beds is 120 square feet per bed, and the mean air space 1472 cubic feet.

The old wards are heated by hot water pipes, the new wards by open fires. Inlets for fresh air are provided at a low level, and "air-pump" ventilators are fixed in the roof. The iron bedsteads provided, are fitted with woven-wire mattresses, and on these are placed chaff beds.

The town's water is laid on, and movable baths are supplied. The drainage is conducted to settling-tanks on adjoining land, and the sludge is incinerated periodically on the spot. The contents of the pails from the earth closets are buried.

The hospital is used for paupers from the Stockport

Union on terms arranged with the Guardians ; and very largely by neighbouring Sanitary Authorities, on terms arranged. The number of patients received in 1892 was 85 ; the number received in 1893 was 112, and in 1894 (up to November 15th) 94. If ordinary patients received from the Borough are able to pay for maintenance, a small charge is made.

The Medical Officer of Health administers the hospital under the Sanitary Authority.

A horse-ambulance, with litter for recumbent patients, and extra door at back for convenience of removing litter, is provided ; and there is also a Washington Lyon's disinfecting apparatus.

The hospital is between 200 and 300 yards from the nearest house, and no ill effects have been noticed from it. No outbreak has ever followed the removal of outside patients into hospital.

The cost of constructing and furnishing the hospital was as follows :—

		£	s.	d.
Wooden erection	... ..	1659	7	10
Furnishing (proportion)...	... ..	157	12	2
Permanent Building, walling in,				
laying down Road, &c.	... ..	1998	11	3
Furnishing (proportion)...	... ..	184	8	9
		<hr/>		
		£4000	0	0

The cost of the site was £550. The Authorities are satisfied with the arrangement of the hospital and the results obtained, and do not consider that further accommodation is required at present.

MACCLESFIELD.

Municipal Boroughs.

Population at Census, 1891—36,009.

Estimated population in middle of 1894—36,009.

Area in acres—3,215.

This Urban Sanitary Authority became alarmed at the Sheffield experience of 1887, and at a Special Sanitary Committee on April 14th, 1888, it was resolved to provide a temporary isolation hospital. Accordingly a portable "Ducker" hospital was erected, and this was opened on May 1st. It stands in a field $5\frac{1}{2}$ acres in extent, and about half a mile from the populous part of the District. The building is on elevated ground (sandy soil) and about 300 yards from the road.

The hospital consists of a light framework over which is stretched weather-resisting paper. It provides two wards to

hold 6 beds each, two nurse's rooms, a scullery and earth closet. There are two closed stoves in each ward and ventilators in the roof. The furniture is simple and sufficient and includes two good iron baths on rollers.

There is no proper drainage or permanent water-supply. The slop-water discharges to a depression in the field, about 50 yards from the hospital, and there sinks into the ground. When any patients are under treatment a man attends every day to empty the closet pails, the contents of which are disinfected and dug into the ground. Enteric fever excreta are kept for some days in a closed vessel in contact with a strong solution of corrosive sublimate, before being buried.

A tank on wheels is used to bring water three times a week to the hospital, the water being drawn from the nearest town supply.

No two diseases are treated at the same time; and after a ward has been used for small-pox a considerable interval is allowed for ventilation, scrubbing and fumigation before the ward is used for any other disease. In 1892, 13 cases of scarlatina were treated in hospital; in 1893, 5 cases of small-pox, 81 of scarlatina and 1 case of typhoid fever were treated; in 1894, 5 cases of small-pox (including a case of chicken pox) 7 of scarlatina, and one case of diphtheria were treated.

The floor-space for each of the 12 beds is 108 sq. ft., and the air-space per bed is 1188 cubic ft.

No charge is made to patients for maintenance, &c., unless they can clearly afford it. Paupers are paid for by the Guardians at the rate of 21s. per week, and the same charge is made when patients are sent in by the Macclesfield Rural Sanitary Authority, or occasionally some other neighbouring Sanitary Authority.

The Medical Officer of Health has entire control of the hospital. One nurse is kept permanently, and another employed as required.

There is no proper disinfecting apparatus, but there is a small wooden erection contiguous to the hospital which is used for fumigating clothes, &c., by means of burning sulphur.

A covered wagonette (of a size to carry six) is provided as an ambulance. The seat on one side is used as a bed if necessary.

The cost of the hospital was £365, laying out the ground, furnishing and other expenses came to £220, and the cost of the site was £800. Patients cost about 20s. a week.

There is no evidence of infection being spread from the hospital.

The hospital is already showing signs of decay. The paper, in parts, requires frequent renewing. In wet weather the rain finds its way under the doors, &c.

The Medical Officer of Health for the Borough is of opinion

that a permanent hospital is needed, and that it should provide the same number of beds. He considers the present site suitable.

When inspected the hospital was empty. That the accommodation may prove insufficient even for one disease is evidenced by the fact that several times, in 1893, two scarlatina convalescents occupied the same beds.

NORTHWICH.

Urban Sanitary District.

Population at Census, 1891—14,914.

Estimated population in middle of 1894—17,000.

Area in acres—1,758.

The only provision made for the isolation and treatment of cases of infectious disease, in this District, consists of a marquee and an old building. The latter was formerly used as an engine-house, and is situated at Wade Brook, in a fairly isolated position. Two patients can be accommodated in the marquee and two in the old engine house, allowing about 2000 cub. ft. of air-space for each patient. Cases of small-pox have been treated both in the building and in the tent, but experience up to the present shows that they recover much sooner in the tent. Eight cases have been dealt with since 1892. No payment has been received from patients or their friends.

A disinfecting apparatus is not provided, but the practice has been to destroy the clothing and articles infected by small-pox patients.

The marquee belongs jointly to the Northwich Urban and Rural Sanitary Districts.

NORTHWICH.

Rural Sanitary District.

Population at Census, 1891—21,218.

Estimated population in middle of 1894—23,850.

Area in acres—54,774.

The hospital recently provided for this District, was built owing to the appearance of small-pox in the locality in 1893. It stands on the grass-covered bank of the river, under a mile from the town of Northwich. There being no road to it, it is not very accessible.

It is substantially constructed of timber-framing, boarded outside and inside, the cavity being filled in with sawdust. The roof is made of boards covered with felt, over which is corrugated iron. The hospital is painted outside and varnished inside.

The main building consists of two wards, with a kitchen

and nurse's room placed between. At the outer end of each ward is a lavatory and an earth closet, with cross-ventilation between it and the ward. Each ward is fitted with two beds and light necessary furniture. The floor-space per bed is about 104 sq. ft. and the air-space per bed about 1000 cub. ft. At the top of each ward is an Archimedian-Screw ventilator and window air-inlets are provided. In the centre is a Larbert's stove. There is a large iron tank for rain-water, and water for drinking is brought up 3 times a week in a barrel on wheels. There is a movable bath for patients. Separate from the main building are a van-house, wash-house and coal-house. A disinfecting apparatus has been provided and a new ambulance of good design.

The hospital has only been used by those belonging to the District and not by paupers. No charge whatever is made to patients. Seven cases have been received, viz. : one of diphtheria in 1893, and six of typhoid fever in 1894.

Mr. Bennett, the District Surveyor, who built the hospital, has charge of it, and a married woman is appointed as nurse and caretaker. As regards medical attendance, local practitioners have agreed to attend any case when requested for a fee of five guineas a case. The nurse is paid £6 a year to keep the hospital aired and ready for use. When the hospital is in use the nurse receives an extra £1 a week and her food.

When this hospital was inspected it was not in use, but all the buildings and contents were found in excellent order. The hospital, out-buildings and furnishing complete cost £225. The site is rented for £12 a year, convalescents being free to exercise over the rough land around.

RUNCORN.

Urban Sanitary District.

Population at Census, 1891—20,050.

Estimated population in middle of 1894—20,050.

Area in acres—1179.

Plans for an Infectious Diseases Hospital were adopted by the Runcorn Improvement Commissioners on December 5th, 1881, and were submitted to the Local Government Board in January, 1882. A portion (about half) of the design approved was built in March, 1883. A statute acre of common land, on Runcorn Hill (new red sandstone) was obtained, through the Lord of the Manor, free of charge, and this makes an excellent site. It lies very high, there is a good road to it, and it is well away from inhabited houses. The permanent buildings erected, consist of a pavilion containing two wards and

a caretaker's cottage, the latter being a portion of what was intended as an administrative department.

In January, 1893, owing to the prevalence of small-pox in the district, two large wooden erections were put up, each containing a ward and nurse's room. There is also a bath room and a store room.

The permanent building gives accommodation to 12 patients, and the wooden erections to 22 patients. In the permanent building the floor-space per bed is 144 square feet, and the air-space per bed 1900 cubic feet. In the wooden erections the floor-space per bed is 153 square feet, and the air-space per bed 1710 cubic feet.

The wards are warmed with slow-combustion stoves. A central extracting shaft is provided for each ward, and air inlets six inches above floor level. A movable bath is provided for the permanent building.

Each ward has an earth-closet and sink. The pail contents are removed periodically by a contractor, and as there are no sewers, the slop-water is conducted to a sewage-tank.

There is a constant high pressure supply of good water.

The hospital is not used by any neighbouring Sanitary District, nor is it used for paupers, though up till about a month ago, pauper patients were received under agreement with the Runcorn Guardians. The number of patients treated during 1892 was 14; the number treated in 1893 was 142, and the number treated in 1894 was 8.

The receipts from patients or on their behalf have been so small, that the hospital may be regarded as free, though it has never been declared free by the Authority.

The hospital is administered by a matron, who acts as principal nurse, and is assisted by one assistant nurse. The patients are almost invariably attended by their own medical attendant, at their own cost. However, during the small-pox epidemic, special arrangements had to be made by the Sanitary Authority.

There is no disinfecting apparatus provided, but the Urban Authority has an agreement with the Runcorn Rural Sanitary Authority for the use of their apparatus. There is a horse-ambulance and hand-ambulance.

There is no evidence of disease having spread from the hospital. Only three houses are at all near.

The cost of the permanent building (caretaker's cottage and ward pavilion) was £1000. When accommodation was required for the cases of small-pox, the Secretary of the Urban Sanitary Authority appealed to the Manchester Ship Canal Company to dispose of some of the Company's disused huts on easy terms. This they consented to do, and as a result, the cost of providing the temporary hospital was only £150. The

entire cost of furnishing all the wards was £125,—that is to say, £50 for furnishing the permanent building, and £75 for furnishing the temporary erections.

RUNCORN

Rural Sanitary District.

Population at Census, 1891—22,467.

Estimated population in middle of 1894—23,320.

Area in acres—45,923.

This Authority was wholly without hospital accommodation at the beginning of the year 1893, when small-pox appeared in more than one part of the District. The large wooden building, which is now the hospital, was then the Norton office of the Manchester Ship Canal. On the application of the Runcorn Sanitary Authority it was kindly placed at their disposal, and they pulled it down and re-erected it, at Moore, on a spoil bank by the side of the Ship Canal. The building and site are only lent, and the Authority are subject to notice, practically at will, should the Ship Company want to use or let the site. The small-pox outbreak was mainly among the employés at the Ship Canal Works, hence the action of the Company in helping the Sanitary Authority to make provision for the infectious sick.

The building contains 2 wards, a nurse's room, kitchen and store room. A stout framework of wood has been covered outside and inside with boards, neatly finished off and painted. The wards are parallel to a central passage. Each is 16 ft. wide and $10\frac{1}{4}$ ft. high. One is 35 ft. long and fitted with 12 beds, and the other $27\frac{1}{2}$ ft. long and fitted with 9 beds. The air-space in the larger room (used for male patients) was therefore 478 cub. ft. per bed; and the air-space in the other room (used for female patients) was 501 cub. ft. per bed. Thus the amount of air-space for 21 patients was about a quarter of what it should have been, and yet at one time there were in this hospital 25 patients. Each ward has 2 ordinary grates and a central ventilator taken through the roof. The iron bedsteads, woven-wire mattresses and other furniture are good and sufficient.

The water was derived from the temporary supply of the Ship Canal employés: but this is now done away with. A closet off each ward, one bath, one kitchen sink, and one lavatory sink, drain into a cesspool (60 feet in rear), the contents of which are disinfected and discharged on a sand bank.

The outbuildings consist of a disinfecting house, a house for the ambulance-van, a mortuary and coal shed. The disinfecting apparatus is Washington Lyon's; and the ambulance is a closed-in van which was used to remove patient and bedding, &c., at one journey.

This hospital was in use from February 6th, to July 6th, 1893, during which time 46 patients were treated—all small-pox cases. At the request of the Sanitary Authority, the District Medical Officer of Health administered the hospital and attended the patients professionally. No patients were excluded because they were paupers—one indeed was received from the Dutton Workhouse. The hospital was quite free—but only for small-pox cases. No spread of disease from the hospital was traced.

All the Sanitary Authority paid for this hospital was the cost of taking it down, removing it 4 miles, and re-erecting it. The proximate cost of stamping out the epidemic has been set down at £1120. This, less the value of the hospital furniture, disinfecting apparatus and van (£350 in all), is reduced to £770.

WALLASEY.

Urban Sanitary District.

Population at Census, 1891—33,229.

Estimated population in middle of 1894—36,500.

Area in acres—3,408.

After the rejection of various proposed sites for a hospital, owing to the opposition of interested persons, a field off Mill Lane was purchased, and no opposition was offered to the erection of the hospital. The site measures 2 acres, 1 rood, and 11 poles, is near the river and almost in the centre of the District. The soil is boulder clay.

The hospital is a substantial structure, well built of brick. It consists of:—

- (1) An administrative block, affording accommodation for a matron, 3 nurses, 2 servants, and a laundry maid.
- (2) A pavilion containing two large and two small wards with kitchens, &c., arranged for the accommodation of 8 adults (allowing 2000 cubic ft. air-space per bed) or 12 children. Beside the 8 beds there are 2 cots.
- (3) A pavilion containing two large wards arranged for the accommodation of 12 adults (allowing 2000 cubic ft. air-space per bed) or 18 children. Beside the 12 beds there are 4 cots. A convalescent room is attached to each of these wards, and each of these rooms could be used for a patient.
- (4) A block containing laundry, disinfecting chambers, mortuary and coach-house. An excellent ambulance waggon is provided, also a van for bringing bedding and clothes to be disinfected and another van for returning them. The pair of disinfecting chambers

are fitted with a "Washington Lyon's" Steam Disinfecter.

The hospital was opened in 1887, but the second pavilion is a recent addition and was only opened in 1894. As at present furnished there are 24 beds, and 6 cots provided. It seems to be adapted to the treatment of 3 diseases, or possibly (if the 2 convalescent rooms were in use for ordinary patients) for 4 diseases at the same time.

On inspection the premises were found to be well kept and in good order, but some of the wards in the pavilion opened in 1887, were overcrowded. The two larger wards in this pavilion intended for 3 adults each, had 5 beds and a cot in each, but at no time have they accommodated more than 6 children apiece.

The wards are fitted with Boyle's ventilators, which are reported to have the defect of admitting rain in high storms. Sherringham inlets are provided in the old pavilion. Tobin's tubes serve as inlets in the new pavilion. The upper parts of the transom windows are also available for ventilation. In the old pavilion the wards are warmed by open grates for burning coal. In the new pavilion the wards are warmed by Shortland's stoves, burning a mixture of coal and coke.

The furniture, consisting of iron bedsteads, spring wire mattresses, lockers and washstands combined, chairs, lounges, bedrests, &c., is all good and can be easily washed.

There are 2 movable baths and 2 w.c.'s for each pavilion, all of good pattern

The water provided is the public supply of the district, from wells in the new red sandstone. The premises are drained into the public sewer in Mill Lane, interceptors and ventilators being provided.

The hospital is not used by any other Sanitary Authority. Paupers are admitted if sent by the relieving officer, the Guardians paying 20/- a week for each patient. They are attended by the Medical Officer of Health. The charge made for maintenance is 42/-, 21/-, 10/6 or 5/- per week per patient — half-price for children under 12 years being charged for the two first classes. No one is excluded because unable to pay, and for most of the patients nothing is paid. The number of patients received in 1892 was 39, the number received in 1893 was 62, the number received in 1894 was 99.

The hospital is administered by the Hospital Committee of the Local Board, the Medical Officer of Health and Matron being the responsible officers. Medical practitioners who send in cases attend them.

The Authorities have found the hospital has been the greatest possible benefit to the District; and no complaint of its having a bad influence on the surrounding neighbourhood has ever been made.

The cost of the construction and furnishing of this Hospital was £5455, and the cost of the site was £1700. The cost of maintenance during the last 3 years was as follows:—

For year ending March 25th, 1892	£751	14	7
„ „ „ 1893	£606	15	5
„ „ „ 1894	£699	5	10

The Medical Officer of Health reports that the Hospital Committee are arranging to provide a small pavilion of wood or iron to accommodate 2 to 4 patients in case of small-pox or typhus breaking out, as it is felt that it would not be well to put these in one of the pavilions.

WINSFORD.

Urban Sanitary District.

Population at Census, 1891—10,440.

Estimated population in middle of 1894—10,670.

Area in acres—5,780.

In February, 1893, two cases of small-pox were reported in this District. They occurred in a “living van” and there being no hospital accommodation provided both cases were treated in the van. During April, in the same year, another case of small-pox was reported, and there being no means of isolating it a temporary wooden hospital was erected, and the case moved in.

The site of the hospital is a field off Rilshaw Lane, which is fairly remote from inhabited houses, but access to it needs improving. The building consists of a light wooden framework covered with boards, carefully fitted and varnished. It measures about 22ft. × 15ft. and contains a room (15ft. × 12ft.) intended for 2 patients, and a small bedroom and kitchen for a nurse, the latter being furnished with a stove. Up to the present there has been only one case treated in this hospital. The patient’s wife acted as nurse.

The Local Board contemplated extending this hospital in 1894, and Mr. Shorrock has kindly supplied a plan showing the proposed alterations and additions. It provides for a central corridor, having on one side 2 wards, 15ft. × 9ft. each, and on the other a small bedroom and kitchen for a nurse, a scullery, bathroom and water closet. This extension has not been undertaken, and the little hospital remains as originally erected.

The cost of the hospital was £35 6s. 3d., and the cost of the furniture £13 18s. 3d. The Board consider provision made is sufficient.

WIRRAL JOINT HOSPITAL BOARD DISTRICT,

COMPRISING

The Rural Sanitary District of Wirral.

The Urban Sanitary District of Higher Bebington.

”	”	”	Lower Bebington.
”	”	”	Bromborough.
”	”	”	Neston and Parkgate.
”	”	”	Hoylake and West Kirby.

Population at Census, 1891—36,672.

Estimated population in middle of 1894—35,390.

Area in acres—45,156.

These combined Districts have two hospitals for infectious diseases—the Greasby Hospital, which was built in 1879, and the Spital Hospital, which was built in 1890.

The Greasby Hospital.—The plot of land on which this Hospital stands was conveyed to the Rural Sanitary Authority of the Wirral Union by Deed of Gift from the late Richard Barton, Esq., of Caldy, dated December 8th, 1878. It measures 2 roods 12 poles. The soil is clay loam and beneath is the sandstone rock. This site is accessible from the road and conveniently situated for the west side of the Wirral peninsula. By November, 1879, the hospital was built and completely furnished. The cost of the building and furnishing was as follows:—

	£	s.	d.
Building - -	902	17	0
Architect's Fees -	44	17	9
Furniture -	118	14	0
	<hr/>		
	£1066	8	9

The hospital consists of a main building and caretaker's cottage. The main building contains 2 wards measuring about 20 ft. × 20 ft., designed for and originally furnished with 3 beds each. When inspected there were 5 beds in one ward and 5 in the other, and a nurse and 14 children were occupying the 2 rooms day and night. The children were all scarlatina convalescents and able to be up during the day time. The practice of late has been to treat scarlatina cases at first in the Spital Hospital, and when convalescent to transfer them to the Greasby Hospital. The cottage of the caretaker and his wife consists of a large kitchen, larder and scullery, and 2 rooms above. From the cottage to the main building is an open covered way, about 24ft. in length. Beyond the main building is an outbuilding used as a washhouse adjoining which are 2 dry-closets. Between the wards is a nurse's room, and a bath-room not supplied with water, and consequently never used.

An ordinary hip bath, which can be taken into either ward, is used to bathe the children. The iron bedsteads are fitted with steel spring mattresses, and on these are placed beds stuffed with straw. Each ward has two Tobin tubes for the admission of fresh air but the outlet ventilators, at the time of inspection, were closed and could not be opened. Warming is by open fires.

Water is laid on from the Wirral Water Works, and a rain-water tank is provided for washing. There is no sewer near, and the liquid slops are disposed of in a specially arranged earth filter. The pail-contents from the closets are mixed with chlorinated lime and buried.

The Joint Hospital Board make no charge for patients who belong to any of the Districts contributing, but they have a charge for non-residents, who may be visiting the locality when taken ill. Pauper patients may be admitted and there is no distinction as to treatment between paupers and others.

No disinfecting apparatus is provided. The ambulance kept at Spital is used for this hospital also.

The Board have the management of the hospital with the aid of the medical attendant. When inspected there was a nurse in charge of the hospital assisted by a wardmaid. The nursing at the Greasby Hospital is arranged for by the matron at the Spital Hospital, and the nurse in charge is under her. The caretaker, an old man of 75, is paid 14/- a week when the hospital is occupied, and nothing at other times. He has his cottage, coal, and garden free.

The idea, when this hospital was first built, was that the best way of providing hospital accommodation for infectious cases in Wirral, would be to follow it up by erecting other small hospitals, so as to have one within easy reach of any part of the area. However, the cost, though almost nil when the hospital was empty, was found to be very high (£2 per bed per week) and proper supervision impracticable, so the idea of multiplying small hospitals was given up. However, the hospital proved of such great service that after ten years experience with it the Joint Hospital Board was formed, with a view of building a large hospital in a more central position, and as a result the hospital at Spital was built. After this the Greasby Hospital was at first reserved for patients who paid their own expenses, and later it was transferred to the Hospital Board, who pay rent for it. After the transfer it was reserved for small-pox cases, and since the disappearance of the small-pox it has been used for convalescent scarlatina cases from Spital.

The Spital Hospital.—The site of this hospital is a field which belonged to the Wirral Guardians. It adjoins the site of the Union Workhouse. In extent it is 6,044 square yards, or almost exactly an acre and a quarter. The site is

accessible and conveniently central. The soil is loam for about a foot, under which are 4 feet of clay, and below is yellow sand.

The hospital is substantially built of brick, and consists of a small administrative block accommodating the matron, nurses, &c., and 2 pavilions, as well as the usual outbuildings—washhouse, ambulance house, &c.

The 2 pavilions contain 2 wards, measuring 26 ft. × 26 ft. and 13 ft. high, and 2 wards measuring 24 ft. × 18 ft. and 13 ft. high. The larger wards were designed to hold 4 beds each, the smaller 2 beds each—the whole accommodation provided for patients being 12 beds. Considering that the patients are mainly children, there appears to be no objection to there being 6 beds in each of the large wards (allowing 1464 cub. ft. per bed) and 4 beds in each of the small wards (allowing 1404 cub. ft. per bed)—the whole accommodation for patients being thus 20 beds. At the time the hospital was inspected there were 23 beds in the wards, and in 3 instances there were 2 patients in the same bed.

The total cost of the site, hospital, furnishing, &c., was as follows:—

	£	s.	d.
Site and conveyance of same	127	15	6
Fencing round site	200	17	10
Building	2163	5	5
Architect's commission and Clerk of Works	271	14	0
Making road to hospital	26	10	0
Laying out of grounds	52	7	0
Water main	71	6	9
Furniture and fittings	393	15	6
Telephone, bells, &c.	18	11	8
Expenses of Loan and Deputation	50	3	2
Advertising, &c.	6	15	0
	<hr/>		
	£3383	1	10

This represents the whole of the expenses charged to Loan Account during the 3 years ending Lady Day, 1892.

The water-supply is from the well at the workhouse, and the hospital is provided with a cistern. The hospital and house drainage delivers into a settling tank. The sludge is buried, and the effluent, treated by sub-irrigation, finds its way into the brook. As the settling tank did not appear to be working very well when inspected, and the well is within a few feet of the brook, the arrangements for water-supply and drainage are not satisfactory.

The hospital is provided with two movable baths, and with earth-closets (Morrell's) for the house and wards. The pail contents are buried.

The hospital is free for everyone in the Board's District, but strangers taken ill when visiting the locality are charged £1 a week.

The number of patients treated in this hospital during the 3 years ending Lady Day, 1894, is as follows:—

Year ending Lady Day, 1892	...	...	12
" " " 1893	...	...	42
" " " 1894	...	...	79

The disinfecting apparatus is constructed of brick and iron, and is arranged for the application of hot air to the infected clothing, &c. This disinfection is supplimented by fumigation with sulphur. The provision for disinfection is not satisfactory. An efficient ambulance van has been recently provided.

The Board have the management of the hospital with the aid of the medical attendant. The staff consists of a matron and 3 nurses, a porter, laundry maid, ward maid and cook.

Plans are being prepared for adding to the hospital.

The Isolation Hospital provision made by Urban and Rural Districts in the whole Administrative County may therefore be summarized as follows:—

Sanitary District.	Description of Hospital accommodation provided.	No. of beds in permanent Hospital.	No. of beds in temporary erections.	Total No. of beds provided.
Altrincham Urban District	A brick hospital and a wood and iron erection	16	16	32
Altrincham Rural District	A marquee	...	4	4
Congleton Municipal Borough	4 old brick cottages...	...	8	8
Congleton Rural District & Sandbach Urban District	A wooden erection	...	8	8
Crewe Municipal Boro'	An old farm house (brick)	...	7	7
Hyde Municipal Boro'	A brick hospital and a wooden erection	16	20	36
Macclesfield Municipal Borough	A temporary erection (Ducker)	...	12	12
Northwich Urban District	An engine-house and a marquee	...	4	4
Northwich Rural District	A wooden erection	...	4	4
Runcorn Urban District	A brick hospital and 2 wooden erections	12	22	34
Runcorn Rural District	A wooden erection	...	21	21
Wallasey Urban District	A brick hospital	30*	...	30
Winsford Urban District	A wooden erection	...	2	2
Wirral Joint Hospital Board District at Greasby	A brick hospital	6	...	6
" " at Spital	A brick hospital	20	...	20
		106	128	234

* Six out of these are cots for young children.

Thus in 15 Urban Districts and 5 Rural Districts Isolation Hospital provision has been made to some extent. Among these there are two instances of combined action—(1) Congleton Rural District and Sandbach Urban District having jointly provided a small hospital, and (2) Wirral Rural District and 5 Urban Districts in the Hundred of Wirral jointly maintaining 2 hospitals. The hospital at Altrincham may also be regarded as a joint hospital, as the neighbouring Urban District of Bowdon has a right to use this hospital under the original trust, and pays an annual contribution towards expenses.

However, in extent and quality, the provision made in these different Districts varies enormously. By the above summary it will be seen that only 6 permanent hospitals have been provided. Three of the Districts providing permanent hospitals, and 6 others, have provided temporary hospitals constructed entirely of wood, or of wood and iron, or wood and paper. In one District a farm-house has been converted into a temporary hospital, in another four cottages have been taken, in another the hospital accommodation is an old engine-house and a marquee, while in another a marquee alone is provided.

The permanent hospitals, though all substantially built and in good condition, differ much as regards plan and completeness. One (the Altrincham Hospital) is under the disadvantage of having been built in 1851, when the requirements of a hospital for infectious diseases were not understood as at present. Another (the Greasby Hospital) though only built in 1879, has also distinct faults of construction. Two hospitals, on the other hand, (those at Wallasey and Spital) are well designed, and might, in many respects, serve as models to Districts proposing to provide accommodation for the infectious sick.

For convenience of comparison, the year of erection, cost of construction and furnishing, and of site, as regards the permanent hospitals, is here given. It will be at once seen that only very moderate amounts have been expended in providing these hospitals.

Permanent Hospital at	Year when built.	Cost of Construction, Furnishing, &c.	Cost of Site.
Altrincham ...	1851	£ Not known	Site given
Hyde ...	1886	2183	£550
Runcorn ...	1883	1050	Site given
Wallasey ...	{ 1887 } { 1894 }	5455	£1700
Greasby ...	1879	1066	Site given
Spital ...	1890	3255	£128

The temporary hospitals differ fully as much as the permanent hospitals. The best examples, probably, are the hospital at Arclid, erected for the Congleton Rural and Sandwich Urban Districts, and the hospital just outside the town of Northwich, erected for the Northwich Rural District. Both of these are new, well designed and constructed and excellent in their way. The Winsford hospital is also new, and carefully planned and built; but it is too small to accommodate more than one person at a time, and altogether too light to be of much service. The Runcorn Urban erections are constructed from the material of navvies' huts, obtained from the Manchester Ship Canal Company; and the Runcorn Rural erection was an office belonging to the same Company, rebuilt on a "spoil" bank by the side of the canal. The Macclesfield hospital is a portable building, not intended to last many years, and already showing signs of wear. The hospital at Hyde (the largest of these temporary erections) also shows many signs of wear. The Altrincham temporary hospital is apparently exceptionally strong, for although it has been standing upwards of seventeen years, it remains fairly sound and tight.

The year of erection, cost of construction and furnishing, and of site, as regards the temporary hospitals, is here given. Generally this little summary goes to shew that, unless materials can be obtained at exceptionally low prices, a temporary hospital will cost about £50 a bed, exclusive of cost of site. It may be added that inspection has shown that there is great difference in the power of lasting manifested by these temporary hospitals—two showed marked signs of wear after 6 or 8 years, one was little the worse after standing 17 years. The remaining 5 were all erected in 1893, owing to the alarm created by the appearance of small-pox.

Temporary Hospital at	Year when built.	Cost of Construction, Furnishing, &c.	Cost of Site.
		£	
Altrincham	1877	750	Part of site belonging to permanent hospital
Arclid	1893	550	Part of workhouse site
Hyde	1886	1817	Part of site for which £550 was paid
Macclesfield	1888	585	£800
Northwich	1893	225	£12 yearly
Runcorn	1893	225	Site given
Moore (Runcorn R.D.)	1893	Building lent	Site lent
Winsford	1893	49	Site belonging to Local Authority.

In four of the Districts which have made some provision for isolating infectious cases, neither permanent nor temporary hospitals have been built. Four methods of making provision have been tried. The method adopted in the Borough of Congleton has been paying the rent of four cottages (£25 a year) and holding them in readiness for the accommodation of small-pox cases, should they arise. The main objection to these particular cottages is that they are not themselves isolated, and that there is no proper drainage for the premises; but under no circumstances would a row of old cottages make an efficient hospital. The method adopted in the Borough of Crewe is an advance upon this—a farm house has been rented at £20 a year, and there has been a further annual expenditure of about £10 for coals, &c. As the nearest house is 100 yards distant, and there are but five houses within a radius of a quarter of a mile, fair isolation is practicable; and the premises are provided with drains. However, in the farm-house at Crewe, as in the Congleton cottages, the isolation of one disease only is attempted. The method adopted in the Altrincham Rural District has been to procure a marquee. The Northwich Urban District have arranged for the use of an old engine-house and also procured a marquee. It would not be possible to say anything in praise of an old engine-house as affording suitable accommodation for infectious cases. As for tents, much might be urged in proof of their fitness as infectious wards. Still it is as supplementary to other hospital provision that tents are most useful. The marquee ordinarily sold for hospital purposes, is about 30 ft. long by 16 ft. wide, about 7 ft. high at the sides, and a little over 14 ft. high at the ridge pole. It is made of double canvas, soaked in a solution of tungstate of soda, to render it unflammable; and should stand on a carefully made floor, well raised above the ground, by means of wooden sleepers and joists. Such a tent contains about 3800 cubic feet of air-space, and is adapted for the treatment of not more than 4 cases. Its cost, with properly made wooden floor, is about £50.

In addition to the isolation hospital provision made by Urban and Rural Districts, there are 5 other Isolation Hospitals in the Administrative County. Copies of the printed form of "Return" already referred to, were sent to those in charge of these hospitals, with a request that the required information would be given. Subsequently the County Medical Officer of Health made a personal inspection of these hospitals, except in the case of the Liverpool Port Hospital, which he had visited not long since.

From the "Returns" sent in, and from personal inspection, the following particulars were obtained regarding:—

The other Isolation Hospital Provision in the Administrative County.

LIVERPOOL PORT HOSPITAL.

The site of this hospital is about four acres of land at New Ferry, having a river front, and convenient of access from the river. It consists of a large iron pavilion with the usual accessories, and provides 36 beds for patients, allowing the regulation amount of air space.

The hospital was erected for the isolation of cholera cases occurring on board ships in Port, but it has occasionally been used for patients suffering from scarlatina or small-pox from some of the training ships in the Mersey.

BROMBORO'-POOL WORKS HOSPITAL

This hospital belongs to Price's Patent Candle Company. It was erected in 1878, and is maintained solely for the use of the Company's Bromboro'-pool tenants and their families. The Company's property at Bromboro'-pool would form part of the Wirral Joint Hospital District, but it is specially constituted an "excepted area." The property is 57 acres in extent, and the number of residents thereon is 560.

The hospital stands on red clay within a walled enclosure of 1450 sq. yards. The buildings cover an area of 340 sq. yards, are of red sandstone with slated roof and tiled floors. There are 2 male wards measuring 24 ft. \times 12 ft. \times 12 ft. high and 12 ft. \times 12 ft. \times 12 ft. high respectively, and two female wards of similar dimensions. There is also a sitting room, bedroom, kitchen and scullery for the caretaker, and a sitting-room and bedroom for a nurse.

An Archimedian-screw ventilator is fitted over the roof of each ward, and inlets are provided at a low level. The warming is by open fire-places. Two baths, supplied with hot and cold water, are provided, and 3 water-closets.

Water is supplied by gravitation in the same way as to the rest of the village. Drainage is into the Mersey, the out-fall being about 250 yards below high water mark. A flushing tank, holding 400 gallons of water, is attached to the drain, and is emptied twice a week when there are any patients in the hospital, once a week at other times.

The large wards are furnished with 4 beds each, the small wards with 2 beds each. Thus there are in all 12 beds for patients, but this only allows 72 sq. ft. floor-space and 864 cub. ft. air-space per bed. The furniture is good and sufficient. The bedsteads are iron, fitted with woven-wire mattresses, on which are hair mattresses.

The number of patients treated in 1892 was 2, there were none treated in 1893, and the number treated in 1894 was 5.

No ambulance is provided. Clothing, bedding, &c., are disinfected by being fumigated with sulphur.

The hospital is in charge of a caretaker, who acts as nurse when required, under the instructions of the Company's Medical Officer.

COUNTY ASYLUM (UPTON) HOSPITAL.

This hospital stands within the grounds belonging to the Asylum, but is a sufficient distance from the main building or any of the outbuildings. It is constructed of corrugated iron, lined with wood varnished inside, and consists of 4 wards and the necessary offices. Each ward is designed to hold 4 beds for patients. The floor-space allowed per bed is 100 sq. ft., and the air-space per bed 1400 cub. ft. The hospital cost about £1000. It is only recently completed, and when inspected was not furnished. It is to be used exclusively for the accommodation of cases occurring among the inmates of the Asylum. It has not yet been used.

COUNTY ASYLUM (PARKSIDE) HOSPITAL.

This hospital is at present in course of erection. The site is a field on the Asylum estate, near enough to the main building to be easy of access, and sufficiently remote to be safe. It is being substantially built of brick, and is designed to provide accommodation for 10 patients, allowing 2000 cub. ft. of air-space for each patient. The hospital will cost about £3000. It is, of course, exclusively for patients occurring among the inmates of the Asylum.

MACCLESFIELD GUARDIANS' HOSPITAL.

The Guardians of the Poor belonging to the Macclesfield Union have just completed a small isolation hospital. It is substantially built of brick and roofed with slate, and stands on a plot of land, $1\frac{1}{4}$ acres in extent, near the Workhouse, and belonging to the Guardians. The soil is sandy loam. It is intended for cases of infectious disease arising in the Workhouse, such as measles, whooping-cough, or scarlatina, and also for the temporary isolation of doubtful cases of small-pox among tramps or Workhouse inmates, prior to moving them to the hospital provided by the Borough.

The hospital consists of an administrative block and two pavilions approached by an open corridor 40 ft. long. A separate building provides a washhouse and mortuary in rear of

the hospital. In each pavilion is a ward containing 2067 cub. ft. of air-space, and a "duty room" containing 1014 cub. ft. of air-space. In all 4 beds are provided—2 in each pavilion. The administrative block containing sitting room, bedrooms, kitchen, and scullery is equal to the requirements of so small a hospital.

Ventilation is provided for by means of Tobin's tubes and outlet tubes carried through the ceilings. Warming is by open fires.

There is a good water-supply, and suitable provision for heating water. Two movable baths are supplied. The drains deliver into the Workhouse sewer and so into the river Bollin. There are 3 earth-closets—one for each pavilion, and one for the administrative.

This hospital cost £1050. When inspected a few of the builder's men were still working on the premises, and the furniture had not arrived. The hospital will be in care of the Master of the Workhouse. The Medical Officer for the Workhouse will be in medical charge of it.

The other Isolation Hospital provision in the Administrative County, may therefore be summarized as follows :—

Belonging to	Description of Hospital accommodation provided.	No. of beds in permanent Hospital.	No. of beds in temporary erections.	Total No. of beds provided.
Liverpool Port Sanitary Authority	A temporary erection of iron	...	36	36
Bromborough Pool Works	A stone hospital ...	12	...	12
County Asylum, Upton	A wood and iron erection	..	16	16
County Asylum, Parkside	A brick hospital (building)	10	...	10
Macclesfield Guardians	A brick hospital ...	4	...	4
		26	52	78

This at first looks like a very important additional provision, however inasmuch as it is not available for the population of the County generally, but is only special accommodation for small communities placed under special conditions, it goes a very little way towards making up the isolation hospital provision required.

The Liverpool Port Hospital was intended for cholera cases, and though in the absence of cholera it has been used for other diseases, it is still only a provision for cases occurring on board ship.

The Bromborough Pool Works Hospital is solely for cases arising among Price's Patent Candle Company's employés and their families—560 persons in all. These 560 persons and the 57 acres on which they live, are deducted from the population and area of the Wirral Joint Hospital District.

As regards the isolation hospital provision for the two County Asylums, it is most desirable that separate provision should be made for such institutions, and the number of beds to be provided cannot be considered in excess of requirements (as cases of more than one disease may require isolation simultaneously) but the proportion of the County population thus provided for is comparatively small. The population of both Asylums, including officers and inmates, may be reckoned at 1370, and for these only the two hospitals designed to furnish 26 patients' beds will be available.

A temporary hospital was erected at Upton, rather than a permanent one, as it was thought there would probably be need for it at once. It is a remarkably well-made temporary hospital, and if carefully kept will be sound and tight twenty years hence. As for the Parkside hospital it is well designed and is being well built. It is arranged to accommodate simultaneously persons of both sexes suffering from two diseases.

The Macclesfield Guardians were recommended to build the hospital they have just completed by the Local Government Board. The object was to protect the Workhouse from infectious disease either brought into the house or breaking out there. Previous to building this hospital 30 beds in a large ward had to be kept empty in case of emergency. Thus this hospital was provided by the Workhouse authorities solely for their own convenience. However when it comes to be considered what number of beds for isolating infectious cases the Urban and Rural Districts of Macclesfield should provide, the 4 beds here supplied should be counted as provision made.

Besides the Isolation Hospitals already mentioned, there is the hospital provision in the Cheshire County Boroughs. These Boroughs are within the Geographical County, though specially excluded from the Administrative County, still it is important that the hospitals they provide should be considered in this Report, as it may be a question if they will assist (and to what extent) in the isolation of infectious cases occurring in contiguous Cheshire Districts.

Copies of the printed form of "Return" sent to those in charge of hospitals in the County were also sent to those in charge of the County Borough Hospitals. From the information furnished in these "Returns" and from personal inspection of the hospitals the following particulars were obtained regarding :—

The Isolation Hospital provision in the three Cheshire County Boroughs.

CHESTER

County Borough.

Population at Census 1891—37,105.

Estimated population in middle of 1894—37,210.

Area in acres—2,960.

Rather more than twenty years ago the Board of the Chester Infirmary received a donation of £500 toward the erection of a special building for the isolation and treatment of cases of infectious disease. This was supplemented by public subscriptions and the balance of some invested funds, and a fever hospital was erected on the Infirmary grounds. The cost of the buildings, fittings and furniture was £1,445 10s. 3d.

The site is a plot of land 255 ft. long, and having an average width of 170 ft. adjoining the Infirmary site. It is separated from the entrance drive by a wall, but not otherwise shut off from the Infirmary premises.

The Fever Hospital consists of a detached house and a pavilion. The house (built of brick) adjoins the Infirmary porter's lodge, near the entrance gate. It contains 2 rooms on the ground floor and three above, with lavatories and closets. This has been used for nurses and for administrative purposes, but 2 rooms were intended for, and have been used for patients—each being large enough for two beds.

The pavilion is a handsome brick building. It has a half-sunk basement, a principal floor, and an upper floor in the centre. The basement contains the laundry, storerooms, cellars, &c. In the centre of the principal floor are the hall, nurses' rooms, kitchen, bath-rooms, &c., and on either side is a ward measuring 59 ft. × 22 ft. × about 15 ft. high. The upper floor provides five rooms, which are used for patients, a nurse's bedroom and sitting-room, 2 store rooms, 2 lavatories, and 2 closets.

There is also a temporary erection of corrugated iron on land adjoining the fever hospital. This contains two wards, a nurse's kitchen, &c., the wards being furnished with 6 beds each. This is a recent purchase of the Sanitary Authority, its value being about £500. It was obtained and placed in its present position solely for the isolation and treatment of cases of small-pox.

The detached house is not at present used for patients, and the main building, or pavilion, is not suited for the accommodation of more than 36 patients, even though a large proportion be children. However at the time the hospital was

inspected, there were 44 patients under treatment, viz.: 28 cases of scarlatina, 9 of typhoid fever and 7 of diphtheria. Occasionally the overcrowding has been greater than this, and more than once a patient has been put up in one of the bath-rooms.

The large wards, having each 4 windows on either side fitted with pivot-hung sashes at the top, 2 apertures in the end wall, and a divided-tube passing through the roof, can be easily kept ventilated. The arrangement for ventilating the other wards is less efficient. There is no cross-ventilation between the large wards and the closets provided for them. Warming is by means of open fire-places and slow-combustion stoves.

The Chester water is supplied to the Fever Hospital, and the drainage is into the town sewers. There appears to be no intercepting-trap between the drains and the sewers, and no through ventilation for the drains.

The number of patients treated in the Fever Hospital was 109 in 1892, 211 in 1893, and 230 (up to Dec. 14th) in 1894.

Patients are sent to the Fever Hospital by the Chester Corporation (who contribute £60 per annum to the support of the hospital), the Chester Guardians, the Hoole Urban Sanitary Authority, the Chester Rural Sanitary Authority and Tarvin Rural Sanitary Authority. A charge of 14/- a week is made in respect of each patient.

There is no specially arranged discharging-room, and no "observation ward" for the reception of cases the diagnosis of which is uncertain. There is no proper disinfecting-apparatus, but a small chamber near the Infirmary mortuary is available for fumigating infected clothing, &c., with burning sulphur.

An old cab, stripped of its linings, is used as an ambulance.

The administration of the Fever Hospital is in the hands of the Board of the Infirmary, the honorary physicians and resident medical officer having charge of the patients.

The pavilion is 27 feet from the nearest thoroughfare and 65 feet from houses on the opposite side of this thoroughfare. It is 75 feet from the main building of the Infirmary. It does not appear at any time to have influenced injuriously the surrounding neighbourhood.

There is no attempt to separate the nurses in charge of fever patients from the other nurses. There is no special staff for the Fever Hospital, but nurses are sent there from the Infirmary, or withdrawn as required.

The resident medical officer reports that during the last year the accommodation proved insufficient, numerous cases having been refused.

BIRKENHEAD.

County Borough.

Population at Census, 1891—99,857.

Estimated population in middle of 1894—105,627.

Area in acres—3,849.

Early in 1876 a pair of villa-residences were altered and adapted for use as a Fever Hospital, and subsequently two large wards were built and connected therewith by a corridor. However in course of years the accommodation proved insufficient and unsatisfactory, and eventually the Corporation decided to build a Hospital which should meet the requirements and have the approval of the Local Government Board. This Hospital is just completed.

The site chosen is at the north-east end of Flaybrick Hill, which is near the border of the Borough and sufficiently distant from inhabited houses. It consists of an elevated ridge of sandstone rock, gradually sloping to the south-east. About $5\frac{1}{2}$ acres have been enclosed by a substantial stone wall, with open palisading on the side giving access to the ground.

The buildings at present erected are an administrative block, 3 ordinary ward pavilions, and an observation ward pavilion, a laundry and disinfector block, mortuary and van-house. The whole is well built of local grey brick, with pressed brick for string-courses and dressings. The floors are of pitch-pine, and are ventilated underneath by a continuous course of perforated blue bricks.

The administrative block is three-storied, and has a one-storied kitchen wing at back. The main building is intersected by a corridor running the whole length, giving access to the various rooms on each side. On the ground floor are waiting-room, matron's sitting-room and bedroom, nurses' dining-room, medical officer's sitting-room, bath-room, and dispensary, servants' hall, pantry, stoves, &c. In the kitchen-wing are kitchen, scullery, larders, &c., and a porter's room with separate entrance from the outside. On each of the upper floors are 9 bedrooms, a linen closet, bath-room, lavatory and w.c. The staircases are of fire-proof construction. The ordinary ward-pavilions have each a male and female ward, measuring 36 ft. by 26 ft., with a nurse's room, store, and bath-room between. Each ward is designed to receive 6 beds. The observation-ward pavilion is for the temporary treatment of cases, the nature of which is at first uncertain, and may occasionally be used for private patients. It is divided into two equal parts, each having two wards and a nurse's room. This pavilion is designed to receive 8 beds. Every one of the 10 wards has a separate w.c. and slop sink. There are 5 lavatories and 5 movable baths.

The hospital therefore provides adequate means for the isolation of 44 patients, and for the simultaneous treatment of persons of both sexes suffering from three different diseases, and also cases of undeveloped disease. The air-space per bed is 2028 cubic feet.

The administrative block is of sufficient size to allow of considerable extension of the hospital ; and there is room on the site to erect 5 additional ward pavilions, thus affording accommodation in all for 104 patients.

The wards are warmed by Shorland's warm air stoves, and ventilated by air-bricks in the wall, hoppers in the upper parts of the windows, and exhaust ventilators running through the roof.

The town's water is supplied. Sewage flows into the river Mersey.

It is proposed to charge any patient requiring a private ward 42s. per week, and to receive paupers, the Guardians agreeing to pay 21s. per week for each patient.

The hospital will be administered by a Lady Matron under the superintendence of the Medical Officer of Health. Patients will ordinarily be attended by the Medical Officer of Health.

There is a special ambulance belonging to the hospital, and a "Washington Lyon's" steam disinfecter is provided.

The cost of the hospital is as follows :—

Preparation and walling-in of Site	...	£4000
Hospital Buildings	... ..	11400
		<hr/>
		£15400

It is estimated that there will be a further expenditure of about £400 for extras, and that the furnishing will cost about £2000.

STOCKPORT.

County Borough.

Population at Census, 1891—70,263.

Estimated population in middle of 1894—73,000.

Area in acres—2,200.

The site obtained for the hospital erected by this Borough in 1881 has an area of $3\frac{1}{4}$ acres, and is situated at the junction of Dialstone and Cherry-tree Lanes. The nearest point of the pavilions is 79 ft. from Dialstone Lane, 63 ft. from Cherry-tree Lane, and over 450 ft. from any dwelling-house. The subsoil is yellow boulder clay.

The cost of the site, hospital and furnishing was as follows :—

	£	s.	d.
Site	1346	14	0
Buildings	4635	13	4
Furnishing (to March, 1893) ...	606	0	8
	<u>£6588</u>	<u>8</u>	<u>0</u>

This hospital consists of an administrative block and two detached pavilions. On the ground floor of the central block are a dispensary, matron's parlour, kitchen and scullery. Upstairs are the matron's bedroom, a large bedroom for 3 servants, 3 nurse's bedrooms, and bath-room. In the basement are linen stores, boiler for heating apparatus and cellars. Each pavilion is approached from the central block by a covered corridor. It is entered by a hall leading to the passage giving access to 3 wards. Two of these wards contain each 12,096 cub. ft. of air-space, the third 4,410 cub. ft. of air-space. Each pavilion also contains a nurse's room and bath-room with movable bath. The administrative block and southern pavilion have been recently provided with water-closets. In the northern pavilion (used for typhoid fever cases) are earth-closets, scavenged from outside. In all 35 beds are provided for patients

The wards are warmed with open fires and hot-water pipes. Ventilation is by means of air inlets near the bed-heads, and windows arranged for the upper third to fall inwards.

Filtered upland surface water is supplied. The drainage is into the public sewers.

All patients resident within the Borough are admitted free. Members of the families of ratepayers in the Borough who live outside, are charged at the rate of 25s. per week.

Paupers are received into the hospital, the Guardians paying $2\frac{1}{2}$ guineas per week for each patient. Provided there is room, neighbouring Sanitary Authorities are permitted to send cases to the hospital on their undertaking to pay at the same rate.

The number of patients treated varies much from year to year. During the four years 1890-93 the record stands as follows :—

	1890.	1891.	1892.	1893.
Small-pox	1	0	6	22
Scarlatina	91	32	26	122
Typhus Fever... ..	0	0	1	0
Typhoid Fever... ..	22	15	16	84
Diphtheria	2	1	2	9
Other Diseases... ..	4	0	0	1
	<u>120</u>	<u>48</u>	<u>51</u>	<u>238</u>

The payments received on behalf of patients, and the net cost to the Authority after deducting their payments, during these 4 years, were as follows:—

			Patients' Payments.			Net Cost.		
In 1890	...	...	122	14	6	607	16	2
„ 1891	...	...	35	7	0	928	6	2
„ 1892	...	...	150	18	6	509	19	8
„ 1893	...	...	122	12	0	1392	8	11

About eighteen months ago a very necessary addition to the hospital was made—a small discharging-house with bathroom.

The hospital is under the supervision of the Medical Officer of Health, who also ordinarily attends the patients, but practitioners sending in patients may attend them at their desire. The hospital is in charge of a steward and matron, the latter being a trained nurse.

In 1893, one of Messrs. Goddard, Massey and Warner's large "Nottingham" disinfectors was purchased and erected in a suitable disinfecting-house built for the purpose, and lined throughout with glazed bricks. At the same time 2 bathrooms, with undressing and dressing rooms, were provided, the water for the same being heated by a steam coil in connection with the disinfector. The arrangement answers well, enabling the members of infected families to be bathed while their infected clothing is being dealt with. The total cost of the disinfecting station was £815 5s. 5d., including £6 10s., the cost of the preliminary inquiry.

A 4-wheeled ambulance van is provided.

On the occurrence of a case of small-pox in August, 1893, when one of the pavilions was occupied with typhoid fever cases and the other with scarlatina cases, the Sanitary Authority had to consider the necessity of providing further isolation accommodation. Accordingly directions were given for the utilization of Whitehill House for the reception of small-pox cases only. When purchased, some time since, it was regarded as a possible auxiliary infectious hospital, and it is perhaps better adapted to this purpose than any other readily obtainable building. The house was of late extensively altered with a view to its being used as a hospital, and a deep well has been sunk to supply it with water. The Whitehill Hospital thus provided is 615 ft. from the nearest inhabited building, and there are comparatively few houses within a quarter of a mile radius. It contains 2 rooms on the ground floor having respectively 8945 and 3506 cub. ft. of air-space, and 5 rooms above. It is reported to be large enough for the accommodation of 15 patients: according to the measurements given about 10 patients should be the maximum number accommodated at the same time.

According to the Borough Medical Officer of Health there is provision at the Dialstone Hospital for 35 patients of both sexes, suffering from two diseases, and at Whitehill hospital for 15 patients of both sexes suffering from small pox only. In his opinion the whole provision for patients instead of being 50 beds should be 75. In particular he recommends the erection on the Dialstone site of a third pavilion and a quarantine or observation ward for suspicious or doubtful cases, as well as further accommodation for nurses

A high unsurmountable railing or fence round the hospital ground is needed, also a similar fence dividing the two exercise grounds used by convalescents.

The hospital has not exercised a bad influence on the surrounding neighbourhood, but contiguous Sanitary Districts having made no provision for isolating cases of infectious disease the Borough is occasionally infected from without. A recent instance is recorded in which the occurrence in the Borough of 5 scarlatina cases (one of them fatal) was due to an infectious child belonging to the Stockport Rural District playing with children in the Borough.

The Isolation Hospital provision in the three County Boroughs, may be summarized as follows :—

County Borough.	Description of Hospital accommodation provided.	No. of beds in permanent Hospital.	No. of beds in temporary erections.	Total No. of beds provided.
Chester	A brick hospital and a wood and iron erection	36	12	48
Birkenhead	A brick hospital ...	44	...	44
Stockport	A brick hospital and an old house	35	10	45
		115	22	137

The Chester Hospital has all the defects of a hospital built twenty years ago, and some others. The one large block that now forms the permanent part is really only suited for the treatment of one disease. If used for the treatment of two diseases simultaneously, there must inevitably be some risk of persons sent in with one disease contracting another. Then this large block is on ground adjoining the site of the General Infirmary, the fever wards being a part of the Infirmary, and the nursing being done by the Infirmary staff. There is also no effectual arrangement made for disinfecting clothing, bedding,

&c., and no discharging-room to insure that patients when leaving carry no infection with them. The small temporary building, which was erected for small-pox, and has not been used for any other disease, is really no part of the hospital, and is about to be removed elsewhere. Thus the maximum number of beds that the Chester Fever Hospital should provide is 36, and as the population of Chester City is estimated at 37,210, the institution is in any case barely equal to the requirements of the Chester Corporation and Guardians. However it is (as already stated) used by Hoole Urban District, Chester Rural District and Tarvin Rural District, these three Districts having an aggregate population of about 24,750. Under these circumstances it is not surprising that the Hospital is often overcrowded.

The Birkenhead Hospital, being only just built, is as nearly perfect as a modern hospital should be. The Corporation were fortunate in having a large, dry, elevated site, remote from inhabited houses and yet not more than two miles from the Town Hall. The hospital is well planned and well built and leaves nothing to be desired. Its one defect is its inadequate size—44 beds are not enough for a town as large as Birkenhead. However as the area levelled and enclosed leaves space for 5 more pavilions to hold 12 beds each, this defect can be easily remedied at any time.

It is not proposed to admit patients into the Birkenhead Hospital from adjoining Districts, but doubtless some arrangement might be made in respect of the Birkenhead Rural District.

The permanent hospital at Stockport is an excellent one. Considering that it was built upwards of 13 years ago it is remarkably free from faults. Recently, an underground passage for hot-water pipes, by which two wards were found to be in aerial communication, was satisfactorily bricked up in two places, the partitions being cemented over; and a discharging-house (providing 3 rooms and a bath) has been built. The two detached pavilions provided admit of the treatment of typhoid fever and scarlatina simultaneously. But occasionally cases of diphtheria, or some other infectious disease, occur, showing the need of a third pavilion. The small-pox cases are very wisely treated on a different site. A detached house, purchased some time ago, and regarded as a possible auxiliary infectious hospital, has been extensively altered, and since Autumn, 1893, appropriated for the reception of small-pox patients.

A few cases of infectious disease have been received into the Stockport Hospital from Hazel Grove (in the Stockport Rural District) and from Cheadle and Gatley, &c. Its rule appears to be that, provided there is room, neighbouring Sanitary Authorities are permitted to send in cases at the rate of 2½ guineas per week for each case.

Considering the population of the Borough is about 73000, the number of beds provided is far short of local requirements. Neither the Stockport Rural District nor any neighbouring Authority should trust to the Borough Hospital for the isolation of their infectious cases.

There remain now but three Isolation Hospitals to be referred to. These are not in any way connected with the County, but they are made use of, or have recently been made use of by Cheshire Districts. Accordingly copies of the printed forms of "Return" described were sent out to gather information as regards these hospitals. Two were also specially inspected, the third made provision for such a very small part of Cheshire there seemed no sufficient reason for visiting it.

From the information supplied in the "Returns" and from personal inspection the following particulars were obtained regarding:—

The other Isolation Hospital provision made use of by Districts in the Administrative County.

MONSALL HOSPITAL.

In December, 1870, a sum of £9000 was contributed by the late Mr. Robert Barnes, towards the erection of a hospital for infectious diseases, and a property known as the Monsall Estate, situated about $2\frac{1}{4}$ miles from the centre of the city of Manchester, was purchased for that purpose. The buildings shortly afterwards erected on the estate were thus called the Monsall Hospital. The accommodation first provided has from time to time been extended. The Hospital may be regarded as a Branch of the Manchester Royal Infirmary, and it is administered by the Infirmary Board.

The site consists of 11 acres of land in the Urban District of Newton Heath, but this includes a small wooded ravine, and only about $9\frac{1}{2}$ acres are available for hospital purposes. The situation is satisfactory as regards elevation, but the soil is clay. These 11 acres are the property of the Trustees of the Manchester Royal Infirmary, who have leased a further area of adjoining land, over 4 acres in extent, making the entire available site over $13\frac{1}{2}$ acres.

The existing buildings are as follows:—

A lodge, disinfecting building, discharging rooms (3) and a waiting-room—all at the entrance. An excellent steam disinfecter is provided, constructed by Messrs. Goddard, Massey and Warner.

An administrative block, a house for resident Medical Officer and assistant Medical Officers, a nurses' home, a servants home, kitchens, stores, laundry, and mortuary.

A block used for typhoid fever and erysipelas. This is a two-storied building. On each floor are 8 wards. Three wards opening into each other are placed on either side of the lobby, and in the rear are 2 single bed wards, rooms for administrative purposes, ward sinks, &c. In all 66 beds are provided for typhoid fever and 14 for erysipelas. Some of these wards are occasionally used for typhus fever or puerperal fever.

A block used for diphtheria. This is a one-storied pavilion having some administrative rooms in the centre and a large ward containing 10 beds on either side. There are thus 20 beds provided.

Five blocks used for scarlatina. Four of these are two-storied pavilions, one is one-storied. The wards are large and arranged on either side of central lobbies and nurses' rooms. The two-storied pavilions have 76 beds each and the one-storied pavilion has 24 beds. There are thus 328 beds for scarlatina.

There is also an "observation pavilion," fitted with 8 beds.

All the above buildings are substantially constructed of brick.

There are also, quite separate from these buildings, six large wooden erections as under:—

Two pavilions for cholera. Each pavilion is arranged to receive 12 beds, the pair therefore providing accommodation for 24 patients.

Three pavilions for small-pox, each arranged for 24 beds, making together provision for 72 patients.

An administrative building, a small-pox lodge, laundry, kitchen and mortuary.

These are strongly constructed, the foundations and some other parts being of brickwork. They were not in use at the time the hospital was inspected.

The entire accommodation in the permanent brick buildings, for patients, amounts to 436 beds, the diseases treated being typhoid, typhus and puerperal fevers, erysipelas, scarlatina and diphtheria. The entire accommodation in the wooden erections, for patients, amounts to 96 beds, the diseases for which provision is made being small-pox and cholera. Occasionally cases of measles are accommodated. The air-space per bed varies in different parts of the hospital. It is generally below the regulation requirements.

Ventilation is provided for largely by windows having the top sashes pivot-hung, ventilating openings above the windows and at the floor level. Warming is mainly by means of open fire places, but heating apparatus (by means of hot air) is used during cold weather.

The water laid on is the Corporation supply. The premises are drained into the public sewers. Special arrangements are made for the disinfection of typhoid excreta.

A good ambulance is provided. It is only used for removing patients from the Royal Infirmary, taking them to the discharging-room, or transferring them from one ward to another.

The Manchester, Prestwich and Chorlton Unions have contracted with the Infirmary Board for the treatment of infectious cases at the Monsall Hospital. The charge made is 25s. per week for each patient.

The Manchester Corporation and many other Sanitary Authorities have also made arrangements with the Infirmary Board for the admission of their infectious cases to Monsall Hospital. The Urban District of Sale appears to have arranged in this way for the isolation of its infectious cases. The Urban Districts of Cheadle and Gatley and of Wilmslow and the Rural District of Altrincham are reported as making use of the accommodation provided at this hospital.

The hospital is administered by the Royal Infirmary Board. The four physicians on the Infirmary Staff are consulting physicians for Monsall Hospital, and each visits once a week for three months during the year. The hospital staff includes a resident medical officer, who is medical superintendent, and two assistant medical officers, a lady superintendent of nurses and a housekeeper. The number of nurses and servants employed necessarily varies with the number of patients under treatment.

The number of patients treated in 1892 was 1,737, the number treated in 1893 was 2,636, and the number treated up to December 1st, 1894, was 2,154.

WARRINGTON CORPORATION HOSPITAL.

The Municipal Borough of Warrington, 2,004 acres in area, and having an estimated population of 56,000, opened a hospital for infectious diseases in May, 1877. Since this date the accommodation has been increased. The original site was somewhat over $1\frac{3}{4}$ acres in extent. The soil is sand some 12ft. deep, overlying clay. The situation is towards the western extremity of the town. It is approached from a street of small houses (Aikin street). An additional piece of land, 5,055 sq. yds. in extent, adjoining this site, was purchased in October, 1892, and is available for hospital extension.

The present hospital consists of an administrative block, 2 ordinary ward pavilions, a special pavilion for doubtful cases, a lodge, and two groups of out-buildings, one containing a laundry, disinfecting chamber, ambulance shed, and a store for wood and coals, the other containing two van-sheds and a garden-tool house. The whole is substantially built of brick, with stone dressings; concrete foundations have been put in, and the roofs are slated.

The administrative block is two-storied, a corridor runs

from the entrance down the centre. On the ground floor are the Medical Officer's room, dispensary, matron's room, large and small store-rooms, kitchen, scullery, &c. On the floor above there is also a corridor giving access to seven rooms, used as bedrooms for matron, nurses, servants, &c. The water-closets for both floors are in a projection at the rear of the building.

The two ordinary ward pavilions are similar, each containing two wards separated in the centre by an entrance lobby, passage, nurse's room, and two small stores. At the further end of each ward is a bathroom (with movable bath), water-closet, and sink. Each ward measures 36 ft. \times 24 ft., and was designed to accommodate 6 patients. The floor-space allowed is thus 144 sq. ft. per bed. One pavilion being higher than the other, the air-space allowed in two wards is 2058 per bed, and in the other two wards 2274 per bed. However, when inspected these wards were much overcrowded. One pavilion, used for cases of scarlatina recently sent in, contained 29 beds, 23 of which were occupied. The other pavilion, used for scarlatina convalescents, contained 26 beds, 24 of which were occupied.

The special pavilion is similar to the others as regards the centre and the bathroom, &c., at either end, but the two wards are much smaller, measuring only 24 ft. \times 14 $\frac{1}{4}$ ft. each. The wards were designed to accommodate 2 patients each, the floor-space allowed being 175 sq. ft. per bed, and the air-space allowed being 2529 per bed. When this pavilion was inspected it was being used for typhoid fever. There were 3 beds in each ward.

Some time since a temporary hospital made of wood and weather-proof paper, was erected contiguous to the permanent pavilions, and furnished with 12 beds, but after standing for some years and being often used, it caught fire accidentally and was burnt down.

A large wooden building, lately in use for small-pox cases on another site, has been re-erected near the permanent hospital. It is now used partly as a laboratory and partly as a store for iron bedsteads, bedding, &c., purchased for the accommodation of patients during the recent small-pox epidemic. It is large enough for the isolation of 12 patients.

There are therefore at Warrington permanent hospital buildings designed to provide 28 beds for patients. At the time the hospital was inspected, there were 61 beds in these buildings. The temporary erection was not in use.

Ventilation is obtained in the permanent wards by means of air inlets about a foot above the floor, ventilating shafts passing through the roof, openings into the flues of the fireplaces, and windows with hinged upper sashes. The fireplaces

have cavity-backs in which fresh air is warmed by passing over hot iron flanges and passed on into the wards.

The bedsteads are iron, fitted with spiral wire mattresses, which are comfortable and cleanly. On these are placed flock beds, which are periodically disinfected. The furniture is made of pine and is simple and neat.

The Warrington Water Work Company's water is laid on to all parts of the hospital. The drains from the hospital deliver into the main sewer in Aikin street, proper disconnection being provided for.

There is no agreement with the Guardians for the treatment of cases sent by them, but the Medical Officer of Health states that no pauper is allowed to spread disease when his isolation is practicable.

The Urban District of Newton-in-Makerfield pay, for right to use the hospital, £100 a year, and 10/- per week for each patient sent from the District. Some time since there was an arrangement between the Warrington Corporation and the Warrington Rural District, also an agreement between the Warrington Corporation and the Lymm Urban District, for the admission into the hospital of patients from these districts, but both agreements appear to have been terminated. This is not surprising, for to meet the requirements of the Borough alone further accommodation is badly needed. Patients from the Borough are admitted free. Until December, 1880, a charge of 16/- a week was made for all patients admitted, but the charge was difficult to collect, and frequently had to be remitted in part or in whole.

The number of patients treated in 1892 was 461, the number treated in 1893 was 343, and the number treated in 1894 (up to December 3rd) was 300.

The hospital is administered by the Medical Officer of Health, who also attends the patients not desiring to be attended at their own cost - For this he is paid £100 a year by the Corporation.

A "Washington Lyon's" disinfecting apparatus is provided. The ambulance is in form like a large brougham, but it has a door at the back allowing a movable stretcher, holding the patient, to slide in, the patient's feet passing under the box seat. There is also a door at the side to admit the attendant, or a patient who is able to sit up.

The cost of the hospital provision at Warrington is as follows :—

	£	s.	d.
Site first taken	300	0	0
Site added in 1892	750	0	0
Release of right in Aikin Street ...	50	0	0
Hospital Buildings	5502	15	1
Entrance Gates, &c.	95	0	0
Hot water apparatus, kitchen ranges, grates, &c.	200	3	9
Gas and water fittings	108	6	6
Furniture, bedding, &c.	460	12	10
Disinfecting apparatus and ambulance ...	199	0	0
	<hr/>		
	£7665	18	2

The cost of maintaining the hospital during the three years 1891-93 was as follows :—

	£	s.	d.
In 1891	1215	3	10
In 1892	1265	3	11
In 1893	1868	0	0

The only means of access to the hospital is through Aikin Street, containing 64 houses belonging for the most part to the working classes ; and joining Aikin Street at right angles, and at a distance from the hospital gateway of 300 ft. and 425 ft. respectively are two other streets of a similar character, one containing 39 houses, the other 35 houses. There are thus in these three streets alone, 138 houses within 550 ft. of the hospital. It is obvious that the hospital site is considerably nearer to inhabited houses than it should be.

WREXHAM JOINT HOSPITAL.

The Joint Fever Hospital, being maintained by the Wrexham Urban and Rural Authorities, is available for the portion of the Rural Sanitary District in Cheshire.

This Hospital is situated about half a mile from Wrexham Railway Station (G.W.R.), and is substantially built of brick. It consists of two large pavilions, observation wards, and a house for the nursing staff. In all 40 beds are provided for patients. Since the opening of the Hospital on October 2nd, 1886, to March 25th, 1894, 439 infectious patients have been isolated and treated. The number of cases admitted during the year ending March 25th, 1894, was 112, including 61 cases of scarlatina, 25 of typhoid fever, 19 of small-pox, 5 of diphtheria, a case of erysipelas and a case of puerperal fever.

The Hospital, with site, cost £6,500, and is excellently

furnished and fitted. A good high-pressure disinfecting apparatus is provided.

Dr. E. Davies, medical officer of health for the northern division of the Wrexham Rural District, is medical officer of the Hospital.

The Isolation Hospital provision not in any way connected with the County but used by Cheshire Districts, may be summarized as follows :—

Name of Hospital.	Description of accommodation provided.	No. of beds in permanent Hospital.	No. of beds in temporary erections.	Total No. of beds provided.
Monsall Hospital ...	A brick hospital and wooden erections	436	96	532
Warrington Corporation Hospital	A brick hospital and a wooden erection	28	12	40
Wrexham Joint Hospital	A brick hospital ...	40	...	40
		504	108	612

The Monsall Hospital, occupying a fine open site at a good elevation, having resident Medical Officers and a large nursing staff, presents exceptional advantages. It is therefore not surprising that it has been used to a great extent by many Districts round Manchester. Considering that there is a Fever Pavilion at the Children's Hospital, Pendlebury, (containing 26 beds for patients), which is used almost solely by Manchester, and that the population of the city probably does not exceed 520,000, Manchester is not ill provided with Isolation Hospital accommodation ; and there appears to be no objection to some Districts, within a convenient distance sharing the provision made at the Monsall Hospital. Many years since the Urban District of Sale made arrangement for the admission of its infectious cases into this Hospital. The Urban District of Cheadle and Gatley are also reported to have used the Hospital to some extent, as well as the Urban District of Wilmslow and the Rural District of Altrincham. Of these possibly Sale, and Cheadle and Gatley (having together a population of about 18,000) might find that it would be convenient to continue to use the Monsall Hospital. The other two Districts would probably do better to make provision by combining with Lymm in Cheshire.

The Warrington Corporation Hospital, at the time it was built, was regarded as the model of a good hospital. In construction and arrangement it was nearly perfect, its one

defect being that it was too near inhabited houses. However the number of beds it was designed to accommodate in the permanent buildings is only 28, about half the number required for Warrington alone; thus though patients have been received in the past from the Runcorn Rural District and the Warrington Rural District, there is no immediate prospect of either District receiving any assistance from the Warrington Hospital in the future. When recently visited the Hospital was found to be overcrowded, as it has been often before. Even if an additional pavilion were erected (as recommended by the Boro' Medical Officer of Health) the Hospital would still be inadequate to the local requirements.

The Wrexham Joint Hospital is only available so far as the Administrative County is concerned, for the very small portion of Cheshire which belongs to the Wrexham Rural District, an area having a population of about 522. It appears to be an excellent Isolation Hospital and doubtless provides well for the Urban and Rural Districts maintaining it.

What further Isolation Hospital provision should be made ?

The sum of the Isolation Hospital accommodation at present provided by Urban and Rural Districts in the Administrative County is therefore 234 beds, and of these 128 are in temporary erections. To this total may be added the 4 beds to be provided in the permanent hospital just built by the Macclesfield Guardians, making in all 238 beds.

According to the usual estimate the provision required for the isolation and treatment of infectious cases, should be equal to one bed for every 1000 of the population. The population of the Administrative County may be estimated roughly at 555,300, and from this must be deducted the enumerated population of the County Asylum at Upton (695), the County Asylum at Parkside (667), and the Bromborough Pool Works (560), which have special Isolation Hospital provision in the County. As there is reason to expect that the Birkenhead Rural District may come to an agreement for the reception of its infectious cases in the Birkenhead Hospital, and that Sale and Cheadle and Gatley may find accommodation at Monsall Hospital, the population of these Districts may also be deducted, as well as the population of the small portion of the Wrexham District in the County, and the population of the Chester Union Workhouse, the infectious cases from which are by arrangement sent to the Chester Hospital.

The population for which Urban and Rural Districts in the County should provide is thus calculated as follows :—

Estimated population of Administrative County, 1894	555300
Less population of two Asylums and Bromborough Pool Works, having special Isolation Hospitals provided in the County	1922
Less population of Birkenhead Rural District (480), Sale Urban District (10155), Cheadle and Gatley Urban District (8100), the Royal Asylum, Cheadle (314), part of Wrexham Rural District in Cheshire (522), and Chester Union Workhouse (563), probably obtaining Isolation Hospital accommodation outside the County	20134
	<hr/> 533244

The number of Isolation Hospital beds Urban and Rural Districts should provide, may be taken as 533. The existing number of beds being 238, it would appear that a further provision of 295 beds is required. But much of the accommodation in rough temporary erections, and some other accommodation, cannot fairly be reckoned as efficient provision, and thus the number of beds still actually needed is about 370.

The final question to be discussed is—Where is the additional accommodation required? It will be convenient to consider this under three headings, viz. :—(1) Western Districts, (2) Central Districts, and (3) Eastern Districts.

PROVISION REQUIRED IN WESTERN DISTRICTS.

Wallasey.—As this Urban District already provides 30 beds and there are 2 wards intended as convalescent or private wards which might be furnished with beds, the provision appears to be nearly equal to the requirements of the locality. The Hospital Committee are at present arranging for the purchase of a small temporary erection, and if one is obtained and fitted with 4 beds sufficient accommodation will have been supplied. It may be added that a little extra accommodation in the administrative block would be a great improvement.

Wirral Joint Board.—The hospital at Spital is an excellent one, but occasionally overcrowded. The maximum number of beds it is at present adapted to hold is 20. An additional pavilion should be built providing 10 more beds for which there may be just sufficient room on the present site.

The administrative block is already a little too small, and if another ward-pavilion were built, it would require to be made about double its present size. Greasby Hospital has been of late much overcrowded. It is not adapted for the treatment of more than 6 patients simultaneously.

Chester, Tarvin and Whitchurch Rural Districts, with Hoole and Tarporley Urban Districts, might be formed into a Joint Hospital District. As already stated the Chester and Tarvin Rural Districts and the Hoole Urban District have had some arrangement with the Chester Infirmary managers for the use of the Chester Fever Hospital. However the accommodation not being in excess of the requirements of the City and the Chester Guardians, the three Rural Districts and the two Urban Districts as above would form a convenient hospital area. The estimated population of these Districts is as follows :—

Chester	Rural District	...	...	8980
Tarvin	„	„	...	12436
Whitchurch	„	„	...	4318
Hoole	Urban	„	...	3329
Tarporley	„	„	...	2720
				<hr/>
				31783

The area of this combined District is 117,609 acres. The hospital should not provide less than 32 beds, and a convenient central situation should be chosen for it—some spot, for instance, a little south of Tattenhall.

Runcorn and Warrington Rural Districts.—The only Isolation Hospital the Runcorn Rural District has is the wooden erection which once formed the Norton offices of the Manchester Ship Canal Company, and was moved to a spoil bank at Moore. Though fitted with 21 beds it is not large enough for more than 6. Besides both the building and the site on which it stands still belong to the Manchester Ship Canal Company, so that at any time the Runcorn Rural District may be again left without any hospital accommodation whatever. The portion of the Warrington Rural District in Cheshire being without hospital accommodation, it might be convenient for the two Districts to make joint provision. The estimated population of these Districts is as follows :—

Runcorn	Rural District	...	...	23320
Warrington	„	„	...	2493
				<hr/>
				25813

The area of this combined District is 49,320 acres. The hospital should provide not less than 26 beds. A site two or three miles south of the one now in use would be suitable.

PROVISION REQUIRED IN CENTRAL DISTRICTS.

Altrincham Rural District and Lymm and Wilmslow Urban Districts.—As the Altrincham Rural District has only provided a hospital tent, and Lymm is without hospital provision, and Wilmslow is not conveniently placed for sending its infectious patients to Monsall Hospital, these three Districts would appear to form a suitable area for a joint hospital District. The estimated population of the District is as follows :—

Altrincham Rural District	...	...	31000
Lymm Urban	„	...	5650
Wilmslow „	„	...	6344
			<hr/> 42994

The area of this combined District is 71,785 acres. The hospital should provide not less than 40 beds. Knutsford, or a little north of it, would be a good position for the proposed hospital.

Northwich Rural District and Northwich, Middlewich and Winsford Urban Districts.—At the Northwich Rural Districts, as already stated, an excellent little temporary hospital was opened in 1893, and some less satisfactory accommodation has been furnished in Northwich Urban District. The 4 beds provided in each of these Districts and the 2 beds provided at Winsford (10 beds in all) make up the total provision for this large central area. The estimated population of this District is as follows :—

Northwich Rural District	...	...	23850
Northwich Urban	„	...	17000
Middlewich „	„	...	4850
Winsford „	„	...	10670
			<hr/> 56370

The area of this combined District is 62,564 acres. A suitable permanent hospital, of not less than 48 beds should be provided. An appropriate site might be found between Northwich and Middlewich.

Borough of Crewe.—It has been pointed out that this Urban District has rented a farmhouse in a fairly isolated position, and provided therein 7 beds for small-pox cases; and also that it has obtained an excellent site for a permanent hospital, and invited architects to submit designs. The proposed hospital should provide accommodation for the isolation and treatment simultaneously of persons of both sexes suffering from two distinct diseases, and “observation” accommodation, for temporarily lodging cases of infectious disease the diagnosis

of which may be doubtful. A permanent provision of 30 beds would probably be adequate at present, but the site and administrative block should be large enough to allow of the accommodation being extended. Having the provision for small pox quite separate from the proposed hospital for other infectious diseases is a manifest advantage.

Nantwich Rural and Urban Districts have as yet made no hospital provision. The estimated population is as follows :—

Nantwich Rural District	...	...	23455
„ Urban „	...	...	7540
			<hr/>
			30995

Possibly this estimate is a little in excess. The area of this combined district is 99161 acres. A hospital of about 30 beds should be provided. Doubtless a site might be found a little to the west of the town of Nantwich.

PROVISION REQUIRED IN EASTERN DISTRICTS.

Ashton-under-Lyne Rural District, the Borough of Stalybridge, and Dukinfield, Hollingworth and Mottram Urban Districts.—The Cheshire portion of Ashton-under-Lyne Rural District and the Urban District of Mottram, do not appear to have made any arrangement for the isolation of infectious cases. The Authorities of Stalybridge, Dukinfield and Hollingworth have made arrangements for isolating their infectious cases at the Hyde Hospital, but the accommodation provided at Hyde is not more than sufficient for the requirements of the Borough. These five Districts might therefore be formed into a Hospital District and jointly make the necessary provision. The estimated population of the Districts is as follows :—

Ashton-under Lyne Rural District	..	2654
Borough of Stalybridge	...	27530
Dukinfield Urban District	...	17830
Hollingworth „ „	...	2895
Mottram „ „	...	3270
		<hr/>
		54179

The area of this combined District is 21332 acres. A site for a hospital, of about 54 beds, could probably be found at or near either Stalybridge or Dukinfield.

Stockport Rural District and Bredbury and Romiley and Marple Urban Districts.—Three sub-districts of the Stockport Rural District (Brinnington, Handforth and South

Werneth) and the Bredbury and Romiley Urban District depend on the Hyde Hospital for the isolation of their infectious cases. The sub-district of Hazel Grove makes use of the Stockport Hospital when there is room. As neither Hyde nor Stockport have made provision in excess of local needs, it would be better for Stockport Rural District and the two Urban Districts named to provide a hospital jointly. The estimated population of the Districts is as follows :—

Stockport Rural District	...	...	10480
Bredbury and Romiley Urban District			5821
Marple	„	„	4968
			<hr/>
			21269

The area of this combined district is 15716 acres. A hospital of 22 beds would meet the requirements of the combined district. The district is so small, almost any available site for a hospital would be convenient of access.

Macclesfield and Hayfield Rural Districts, the Borough of Macclesfield and the Urban Districts of Bollington, Chorley, and Yeardsley-cum-Whaley.—In the extensive area represented by all these districts the only accommodation for isolating infectious cases is the little temporary “Ducker” hospital, providing 12 beds, at Macclesfield, and the Guardians’ hospital, to provide 4 beds, near the Union Workhouse in the same town. The estimated population is as follows :—

Macclesfield Rural District	...	...	17573
Hayfield	...	...	2260
Borough of Macclesfield	...	...	36009
Bollington Urban District	...	...	3913
Chorley	„	„	2270
Yeardsley-cum-Whaley Urban District			1235
			<hr/>
			63260

The area of this combined district is 88389 acres. Accommodation for 48 patients should be provided, or if the “Ducker” hospital be removed (as it must be in a few years at most) for 60 patients. As the site purchased for the “Ducker” hospital is $5\frac{1}{2}$ acres, it would furnish ample space for all the accommodation required. The site, too, would be fairly central as regards the whole combined district.

Congleton Rural District, the Borough of Congleton and Buglawton and Sandbach Urban Districts.—Congleton Rural District and Sandbach Urban District have provided and jointly maintain the excellent little temporary hospital at Arclid, arranged to supply 8 beds. This is the sole provision in these four districts, except the four old cottages reserved for small-pox cases in the Borough of Congleton. The estimated

population of the districts is as follows :—

Congleton Rural District	...	...	15000
Borough of Congleton	...	...	10744
Buglawton Urban District	...	...	1382
Sandbach	„	„	6038
			<hr/>
			33164

The area of this combined district is 51573 acres. As it is not desirable to consider the labourers' cottages as efficient accommodation, further hospital provision should be made for the use of this area to the extent of 26 beds. Arclid, or near it, would be a good central position for such a hospital.

SUMMARY.

The report, therefore, as regards West Cheshire is that Wallasey should provide additional accommodation to the extent of 4 beds; that the Wirral Joint Hospital Board should increase the accommodation at Spital to the extent of 10 beds; that an Isolation Hospital, providing 32 beds, ought to be established for Chester, Tarvin and Whitchurch Rural Districts and Hoole and Tarporley Urban Districts; and that an Isolation Hospital, providing 26 beds, ought to be established for Runcorn and Warrington Rural Districts.

The report, as regards Central Cheshire, is that an Isolation Hospital, providing 40 beds, ought to be established for Altrincham Rural District and Lymm and Wilmslow Urban Districts; that an Isolation Hospital, providing 48 beds, ought to be established for Northwich Rural District and Northwich, Middlewich and Winsford Urban Districts; that an Isolation Hospital, providing 30 beds, ought to be established for the Borough of Crewe; and that an Isolation Hospital, providing 30 beds, ought to be established for Nantwich Rural and Urban Districts.

The Report, as regards East Cheshire, is that an Isolation Hospital, providing 54 beds, ought to be established for Ashton-under-Lyne Rural District, the Borough of Stalybridge, and Dukinfield, Hollingworth and Mottram Urban Districts; that an Isolation Hospital, providing 22 beds, ought to be established for Stockport Rural District and Bredbury and Romiley and Marple Urban Districts; that an Isolation Hospital, providing 48 beds, ought to be established for Macclesfield and Hayfield Rural Districts, the Borough of Macclesfield and the Urban Districts of Bollington, Chorley and Yeardsley-cum-Whaley; and that an Isolation Hospital, providing 26 beds, ought to be established for Congleton Rural District, the Borough of Congleton, and Buglawton and Sandbach Urban Districts.

FRANCIS VACHER,

County Medical Officer of Health.

